

Quattor and Virtualization

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Use of virtualization

- Survey showed that 80% of sites use some virtualization
- Easy integration as PXE booting supported by all hypervisors

Specific support

- S. Childs (TCD) provided configuration component for Xen
- Support in schema and component for associating hosts and guests

New configuration components

- ncm-libvirt: configure and control libvirt
- ncm-oned: configure and control OpenNebula, a virtual machine mgr.

Quattor configuration of “cloud”

- Configures OpenNebula, incl. NFS mounts, etc.
- Configures private and public network bridges
- HTTPS proxy for OpenNebula XMLRPC server
- Ganglia for rudimentary monitoring of cloud infrastructure

Manual configuration:

- Definition/addition of hosts in the cloud (→ register via cron/service)
- NFS mounts verification at installation (→ autoconf)

Need flexible, general solution to give virtual machine information about its execution environment.

StratusLab technique:

- Networking configuration done through DHCP
- Files and parameters passed through disk mounted on `/dev/hdc`
- Initialization script on disk run through `rc.local`

Handling of credentials

- SSH host keys, login keys, ... can all be passed as part of context
- Grid host certificates can be handled in the same manner

Dummy WNs

- Identify one reference WNs and fully compile profile
- Others copy this WN and change name, network config., ...
- One profile per node
- Compilation time scales with number of nodes

Using virtualization

- Allow one reference WN compilation, without node specific information
- Node specific information passed in through contextualization
- One profile per group of machines
- Compilation time scales with number of nodes

Requires: Mechanism for specifying state of fabric!

Bookkeeping!

- Creating and sharing VMs means that knowing what is contained in the VM, how it behaves, etc. becomes a difficult task
- Quattor is an excellent tool for storing the state of machines and being able to (re)generate those images

Requirements

- Already able to boot machines through PXE in standard way
- Would like to interface to virt-install to allow automated generation of images and their deployment

Implementation

- Need service listening for profile changes
- Extract information from profiles and trigger virt-install
- More difficult: deployment/management of images on fabric

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